

## LIST OF CLAIMS / AMENDMENTS

### In the Claims

Please amend claims 1-14, 28, and 30 as shown herein.

Please cancel claim 29 without prejudice.

Claims 15-27 and 34-45 were previously canceled.

Claims 1-14, 28 and 30-33 are pending and are listed following:

1. (currently amended) An A testing interface device for testing an in-test host's support of USB peripherals, the testing interface device comprising:

~~one or more~~ USB interfaces configured to communicate with one or more USB ports of the in-test host to communicate USB messages with the in-test host;

a network interface configured to communicate with a peripheral emulator using a network communications protocol which supports logical network ports, the peripheral emulator configured to emulate USB peripheral devices;

operating logic configured to perform actions comprising:

receiving USB command messages sent from the in-test host to the testing interface device;

sending the USB command messages from the testing interface device to the peripheral emulator through the network interface using the network communications protocol; and

1 receiving USB response messages sent from the  
2 peripheral emulator to the testing interface device through the  
3 network interface using the network communications  
4 protocol;

5 sending the received USB response messages from the  
6 testing interface device through the ~~one or more~~ USB  
7 interfaces to the in-test host to determine whether the in-test  
8 host supports proper operation of the emulated USB devices;  
9 and

10 maintaining a correspondence between the emulated  
11 USB peripheral devices and the logical network ports of the  
12 testing interface device, such that upon receiving a USB  
13 command message from the in-test host using a USB protocol  
14 and corresponding to a particular emulated USB peripheral  
15 device, the testing interface device sends the USB command  
16 message to the peripheral emulator via one of the logical  
17 network ports which corresponds to the particular emulated  
18 USB device, and such that when receiving a USB response  
19 message from the peripheral emulator using the network  
20 communications protocol and corresponding to the particular  
21 emulated USB peripheral device, the testing interface device  
22 receives the USB response message via the logical network  
23 port which corresponds to the particular emulated USB  
24 device.  
25

1  
2       **2.       (currently amended)**     ~~An~~ A testing interface device as recited  
3 in claim 1, further comprising the peripheral emulator, wherein the peripheral  
4 emulator is programmed to emulate one or more USB peripherals.

5  
6       **3.       (currently amended)**     ~~An~~ A testing interface device as recited  
7 in claim 1, further comprising the peripheral emulator, wherein the peripheral  
8 emulator is programmed to emulate HID, bulk, and isochronous USB peripherals.

9  
10       **4.       (currently amended)**     ~~An~~ A testing interface device as recited  
11 in claim 1, further comprising the peripheral emulator, wherein the peripheral  
12 emulator comprises a general-purpose computer programmed to emulate one or  
13 more USB peripherals.

14  
15       **5.       (currently amended)**     ~~An~~ A testing interface device as recited  
16 in claim 1, further comprising the peripheral emulator, wherein the peripheral  
17 emulator comprises a general-purpose computer programmed to emulate HID,  
18 bulk, and isochronous USB peripherals.

1           **6. (currently amended)**    ~~An~~ A testing interface device as recited  
2 in claim 1, further comprising the peripheral emulator, wherein:  
3           the peripheral emulator comprises a general-purpose computer;  
4           the general-purpose computer is programmed to emulate one or more USB  
5 peripherals; and  
6           the general-purpose computer is further programmed to generate USB  
7 response messages that test the in-test host with ranges of USB peripheral  
8 parameters.

9  
10          **7. (currently amended)**    ~~An~~ A testing interface device as recited  
11 in claim 1, further comprising the peripheral emulator, wherein:  
12          the peripheral emulator comprises a general-purpose computer;  
13          the general-purpose computer is programmed to emulate one or more USB  
14 peripherals; and  
15          the general-purpose computer is further programmed to generate abnormal  
16 USB response messages in order to test the in-test host with such abnormal USB  
17 response messages.

1           8.     (currently amended)     An A testing interface device as recited  
2 in claim 1, wherein:

3           a particular ~~USB command message is designated for a particular one of a~~  
4 ~~plurality of different emulated peripheral devices;~~

5           ~~the network communications protocol supports a plurality of logical ports;~~

6           ~~the operating logic maintains a correspondence between emulated~~  
7 ~~peripheral devices and logical ports; and~~

8           the operating logic is further configured to automatically send  
9 acknowledgment messages from the testing interface device to the in-test host  
10 while waiting to receive the USB response messages from the peripheral emulator  
11 ~~sends said particular USB command message to one of the logical ports that~~  
12 ~~corresponds to said particular one of the plurality of different emulated peripheral~~  
13 ~~devices.~~

14  
15           9.     (currently amended)     An A testing interface device as recited  
16 in claim 1, wherein the one or more USB interfaces comprise at least four USB  
17 interfaces.

18  
19           10.    (currently amended)     An A testing interface device as recited  
20 in claim 1, wherein the USB messages comprise HID, bulk, and isochronous USB  
21 messages.

1           **11. (currently amended)**    ~~An~~ A testing interface device as recited  
2 in claim 1, wherein the network interface comprises an Ethernet interface.

3  
4           **12. (currently amended)**    ~~An~~ A testing interface device as recited  
5 in claim 1, wherein the network communications protocol comprises an Ethernet  
6 communications protocol.

7  
8           **13. (currently amended)**    ~~An~~ A testing interface device as recited  
9 in claim 1, wherein the network communications protocol comprises an IP  
10 protocol.

11  
12           **14. (currently amended)**    ~~An~~ A testing interface device as recited  
13 in claim 1, wherein the network communications protocol comprises UDP over IP.

14  
15           **15-27. (canceled)**  
16  
17  
18  
19  
20  
21  
22  
23  
24  
25

1           **28. (currently amended)**       A method of testing an in-test host's  
2 support of USB peripherals, comprising:  
3           sending USB command messages from an in-test host to a testing interface  
4 device which supports logical network ports;  
5           receiving the USB command messages from the in-test host at ~~an~~ the  
6 testing interface device;  
7           packaging the ~~received~~ USB command messages in command data packets  
8 formatted in accordance with a network communications protocol;  
9           sending the command data packets ~~from~~ via the logical network ports of the  
10 testing interface device to one or more peripheral emulators a peripheral emulator  
11 over network communications media;  
12           unpackaging the USB command messages from the command data packets  
13 at the peripheral emulator;  
14           emulating one or more USB peripheral devices that respond to the USB  
15 command messages which have been unpackaged by generating USB response  
16 messages;  
17           packaging the USB response messages in response data packets at the  
18 peripheral emulator, such that the response data packets can be sent from the  
19 peripheral emulator to the testing interface device using the network  
20 communications protocol;  
21           receiving the response data packets from the ~~one or more peripheral~~  
22 emulators peripheral emulator over the network communications media at the  
23 testing interface device via the logical network ports, wherein the response data  
24 packets are formatted in accordance with a network communications protocol;  
25

1        unpackaging USB response messages from the received response data  
2        packets at the testing interface device;  
3        sending the ~~unpacked~~, USB response messages which have been  
4        unpacked from the testing interface device to the in-test host;  
5        receiving the USB response messages at the in-test host;  
6        determining whether the in-test host supports proper operation of the  
7        emulated USB devices based on the USB response messages; and  
8        maintaining a correspondence between the emulated USB peripheral  
9        devices and the logical network ports of the testing interface device, such that  
10       upon receiving a USB command message from the in-test host using a USB  
11       protocol and corresponding to a particular emulated USB peripheral device, the  
12       testing interface device sends the USB command message to the peripheral  
13       emulator via one of the logical network ports which corresponds to the particular  
14       emulated USB device, and such that when receiving a USB response message  
15       from the peripheral emulator using the network communications protocol and  
16       corresponding to the particular emulated USB peripheral device, the testing  
17       interface device receives the USB response message via the logical network port  
18       which corresponds to the particular emulated USB device.

19  
20        **29.    (canceled)**  
21  
22  
23  
24  
25



1           **30. (currently amended)**     A method as recited in claim 28, further  
2 comprising ~~creating abnormal USB response messages in response to the~~  
3 ~~packaged USB command messages and packaging said abnormal USB response~~  
4 ~~messages in the response data packets~~ emulating one or more abnormal USB  
5 peripherals that respond to the USB command messages which have been  
6 unpackaged, by generating abnormal USB response messages and packaging the  
7 abnormal USB response messages in response data packets in order to test the in-  
8 test host's ability to handle such abnormal USB response messages.

9  
10           **31. (original)**     A method as recited in claim 28, wherein the network  
11 communications protocol comprises an Ethernet communications protocol.

12  
13           **32. (original)**     A method as recited in claim 28, wherein the network  
14 communications protocol comprises an IP protocol.

15  
16           **33. (original)**     A method as recited in claim 28, wherein the network  
17 communications protocol comprises UDP over IP.

18  
19           **34-44. (canceled)**  
20  
21  
22  
23  
24  
25